

03050103-020*(Sugar Creek)***General Description**

Watershed 03050103-020 is located in York and Lancaster Counties and consists primarily of *Sugar Creek* and its tributaries. The watershed occupies 29,130 acres of the Piedmont region of South Carolina. The predominant soil types consist of an association of the Cecil-Hiwassee-Mecklenburg-Iredell series. The erodibility of the soil (K) averages 0.27 and the slope of the terrain averages 10%, with a range of 2-25%. Land use/land cover in the watershed includes: 81.5% forested land, 9.5% agricultural land, 4.1% urban land, 3.1% scrub/shrub land, 1.3% barren land, and 0.5% water.

Sugar Creek originates in North Carolina, near the City of Charlotte, and accepts drainage from Flint Hill Branch, Little Sugar Creek, and McAlpine Creek before reaching Steele Creek. Steele Creek also originates in North Carolina and accepts drainage from Blankmanship Branch and Jackson Branch before flowing through the Town of Fort Mill and into Sugar Creek. There are a total of 53.0 stream miles and 81.6 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
CW-247	W/SPRP	FW	SUGAR CREEK AT MECKLENBURG CO. RD 51 (IN N.C.)
CW-248	W	FW	LITTLE SUGAR CREEK AT US 521 (IN N.C.)
CW-246/CW-627	W/I/BIO	FW	SUGAR CREEK UPSTREAM OF CONFLUENCE WITH MCALPINE CREEK
CW-226	P/SPRP	FW	MCALPINE CREEK AT US 521 IN NC
CW-064	S/W/BIO	FW	MCALPINE CREEK AT S-29-64
CW-009	S/W	FW	STEELE CREEK AT S-46-22 N OF FORT MILL
CW-203	W	FW	STEELE CREEK AT S-46-98
CW-681	BIO	FW	STEELE CREEK AT BY-PASS US 21
CW-011	S/W	FW	STEELE CREEK AT S-46-270
CW-013	P/W	FW	SUGAR CREEK AT SC 160 E OF FORT MILL
CW-036	S/INT	FW	SUGAR CREEK AT S-46-36

Sugar Creek – There are four SCDHEC monitoring sites along Sugar Creek. Aquatic life uses are not supported at the furthest upstream site (*CW-247*) due to occurrences of cadmium and copper in excess of the aquatic life acute criterion. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. Further downstream (*CW-246/CW-627*), aquatic life uses are partially supported based on macroinvertebrate community data. Recreational uses are not supported at this site due to fecal coliform bacteria excursions.

Aquatic life uses are fully supported further downstream (*CW-013*); however, there is a significant increasing trend in total phosphorus concentration. There is a significant decreasing trend in pH. A significant decreasing trend in five-day biochemical oxygen demand and a significant increasing trend in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are not supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the furthest downstream site (*CW-036*), aquatic life uses are not supported due to

occurrences of copper in excess of the aquatic life acute criterion. There is a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Little Sugar Creek (CW-248) - Aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions.

McAlpine Creek - There are two SCDHEC monitoring sites along McAlpine Creek. Aquatic life uses are fully supported at the upstream site (***CW-226***), and a significant decreasing trend in turbidity suggests improving conditions for this parameter. There is a significant decreasing trend in pH. Aquatic life uses are partially supported at the downstream site (***CW-064***) based on macroinvertebrate community data. There is a significant decreasing trend in pH. A significant decreasing trend in five-day biochemical oxygen demand and a significant increasing trend in dissolved oxygen suggest improving conditions for these parameters. Recreational uses are not supported at either site due to fecal coliform bacteria excursions.

Steele Creek - There are four SCDHEC monitoring sites along Steele Creek. At the furthest upstream site (***CW-009***), aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant decreasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Further downstream (***CW-203***), aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions. Continuing downstream, aquatic life uses are partially supported at the next site (***CW-681***) based on macroinvertebrate community data. Aquatic life uses are fully supported at the furthest downstream site (***CW-011***). There is a significant decreasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME PERMITTED FLOW @ PIPE (MGD)</i>	<i>NPDES# TYPE COMMENT</i>
SUGAR CREEK UTILITIES OF SC/FOXWOOD SD PIPE #: 001 FLOW: 0.12	SC0027146 MINOR DOMESTIC
DITCH TO SUGAR CREEK WIKOFF COLOR CORP. PIPE #: 001 FLOW: M/R	SCG250094 MINOR INDUSTRIAL

FLINT HILL BRANCH
TWIN LAKES MOBILE ESTATES
PIPE #: 001 FLOW: 0.0625

SC0031208
MINOR DOMESTIC

MCALPINE CREEK
CWS/LAMPLIGHTER VILLAGE SD
PIPE #: 001 FLOW: 0.63

SC0030112
MINOR DOMESTIC

STEELE CREEK
PINELAKES CAMPGROUND
PIPE #: 001 FLOW: 0.038

SC0024759
MINOR DOMESTIC

JACKSON BRANCH TRIBUTARY
UTILITIES OF SC/CAROWOOD SD.
PIPE #: 001 FLOW: 0.02

SC0038113
MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME
FACILITY TYPE

PERMIT #
STATUS

COOKS SHORT-TERM C&D
CONSTRUCTION

291004-1301 (IWP-204)

CONTAINER CORPORATION OF CAROLINA
INDUSTRIAL

463323-6001

JOHN HOWARD LANDFILL
INDUSTRIAL

IWP-229

SAM FISCHER LANDFILL
INDUSTRIAL

IWP-207

CUTSHAW LANDFILL
CONSTRUCTION

462425-1201 (CWP-005)

COLTHARP LANDFILL
CONSTRUCTION

462602-1201
ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM
FACILITY NAME

ND#
TYPE

SPRAYFIELD
LAZY DAZE CAMPGROUND

ND0067105
DOMESTIC

Mining Activities

MINING COMPANY
MINE NAME

PERMIT #
MINERAL

CBM LANDFILL COMPANY
CBM LANDFILL MINE

1094-91
SAND/CLAY

PRESSLEY MINING CO.
PRESSLEY MINE

0808-57
CLAY

RESERVE DOMICILES LTD TRUSTEES
COLTHARP ROAD MINE

1392-91
SAND

Growth Potential

This watershed contains a portion of the Town of Fort Mill and rapidly growing residential areas near I-77 in the Fort Mill Township. Major development factors include the Paramount Carowinds amusement park and surrounding industrial park area, and the Charlotte Knights baseball stadium. Industrial growth is expected surrounding the U.S. Hwy. 521/S.C. Hwy. 160 interchange. Water service is present in all sections of the watershed, except for some areas east of Fort Mill. Sewer service is present in Fort Mill and surrounding areas and along the Steele Creek corridor. The presence of the expanding Charlotte urban area just across the State line and the easy access via I-77 result in a strong growth trend, which will continue into the near future. Transportation factors, which will have an impact on the area, include the now completed widening of I-77 and the proposed Fort Mill bypass for S.C. Hwy. 160.

Watershed Protection and Restoration

Special Projects

NPS Assessment and TMDL for Phosphorus in the Catawba River Basin

In June 2003, researchers at the University of South Carolina completed a \$319-funded study of nutrient loading in the lower Catawba River basin using the WARMF (Watershed Analysis Risk Management Framework) water quality model. The model estimated that the lower Catawba River (defined as the Catawba River downstream of the Lake Wylie dam and all tributaries through Lake Wateree) received an average load of 2100 kg/day of phosphorus for the 1996-1998 study period. Of this load, 46% was from point sources, 39% was from nonpoint sources, and 15% was from Lake Wylie. SCDHEC is currently using the WARMF model, which is being updated through 2003, to further refine nonpoint sources, to determine loading rates that would allow the reservoirs to meet the phosphorus standard (TMDLs), and to calculate wasteload allocations for phosphorus for the impaired reservoirs. Cooperators in the study include Catawba River stakeholders, North Carolina DWQ, and EPA Region 4.

Phosphorus Reduction Implementation

Charlotte-Mecklenburg Utilities is implementing phosphorus reduction at their large plant on McAlpine Creek. This improvement when fully implemented should substantially reduce phosphorus coming into McAlpine Creek and Sugar Creek.

Sustainable Environment for Quality of Life

Sustainable Environment for Quality of Life (SEQL) is a USEPA program, which addresses regional environmental planning through the Centralina Council of Governments and the Catawba

Regional Council of Governments. SEQL is intended to assist local governments in the 15-county Charlotte/Gastonia/Rock Hill region to work together to promote economic growth while protecting the environment. Multiple air and water quality issues are analyzed simultaneously, while addressing transportation, water, land use, energy use, population growth and economic development. The Department has supported the program by providing air and water quality information. More information about SEQL is available at the following website: <http://centralina.org/seql/background.htm>